N00204.AR.005281
NAS PENSACOLA
5090.3a

CONTAMINATION ASSESSMENT REPORT ADDENDUM SITE 1162 OUTLYING LANDING FIELD BRONSON WITH TRANSMITTAL LETTER NAS PENSACOLA FL
4/2/1997
NAVY PUBLIC WORKS CENTER

CONTAMINATION ASSESSMENT REPORT ADDENDUM

U.S. NAVY OUTLYING LANDING FIELD (OLF) BRONSON
SITE 1162
PENSACOLA, FLORIDA

PREPARED BY:

NAVY PUBLIC WORKS CENTER
BUILDING 3887
PENSACOLA, FLORIDA 32508-6500

AUTHOR: GREGORY ALLEN CAMPBELL, P.E.

APRIL 2, 1997

PREPARED FOR:

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND

2155 EAGLE DR., P.O. BOX 190010
NORTH CHARLESTON, SOUTH CAROLINA 29418

BYAS GLOVER, CODE 18410, ENGINEER-IN-CHARGE

DEPARTMENT OF THE NAVY
NAVY PUBLIC WORKS CENTER
310 JOHN TOWER ROAD
PENSACOLA, FLORIDA 32508-5303

IN REPLY REFER TO:

5090
Code 911.4
2 April 97

Mr. John Mitchell
Remedial Project Manager
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: CONTAMINATION ASSESSMENT ADDENDUM, SITE 1162, BRONSON FIELD, PENSACOLA, FLORIDA (FDEP FACILITY NO. 179300938)

Dear Mr. Mitchell:

This letter is in reference to your January 16, 1997 letter addressing comments to the Contamination Assessment Report (CAR) dated December 1996 for the subject site. Per your request, this CAR addendum is prepared in response to your comments as summarized below:

COMMENT 1: Excessively contaminated soil exists at the location of soil boring B3 which is also near the location of monitoring well MW-1. Monitoring well MW-1 had an increase in benzene and total BTEX between the two sampling events. Based upon apparent groundwater flow direction, an additional shallow monitoring well should be placed at the north central edge of the concrete pad, and another shallow monitoring well approximately 15 - 20 feet southwest of MW-1. I also suggest a soil boring with OVA analysis be performed beneath the center of the concrete pad.

RESPONSE 1: Monitoring wells MW-7 and MW-8 were installed northeast and southwest of monitoring well MW-1 on February 18, 1997 as shown in revised Figure 2-3 (see attachment A). Monitoring well construction detail diagrams for monitoring wells MW-7 and MW-8 are also provided in Attachment A. Soil samples were collected during the installation of monitoring wells MW-7 and MW-8 at 1, 4, 7, 10, 16, 19 and 20 feet below land surface (bls) and analyzed for volatile organic vapors using an OVA. The results of the OVA screening are shown in the lithological logs provided in Attachment A. Groundwater samples were collected from monitoring wells MW-7 and MW-8 on February 26, 1997 and analyzed for VOAs, PAHs, TPH and EDB using EPA methods 8260, 8270, FLPRO and 504, respectively. No contaminants were detected in the groundwater samples collected from monitoring well MW-7 and MW-8. A copy of the laboratory analysis is provided in Attachment B. A soil boring with OVA analysis was not performed beneath the center of the concrete pad due to lack of access in this area due to old abandoned engine equipment presently mounted on the pad. Since OVA screening was performed during the installation of monitoring well MW-7; no volatile organic vapors were detected in the soil samples collected at monitoring well MW-7; and the location of MW-7 is in

RE: CONTAMINATION ASSESSMENT ADDENDUM, SITE 1162, BRONSON FIELD, PENSACOLA, FLORIDA (FDEP FACILITY NO. 179300938)

the vicinity of the center of the pad; it is our opinion that the installation of a soil boring at the center of the pad is not needed.

Based upon the findings of this contamination assessment addendum, it is requested that the recommendations outlined in the CAR of December 1997 be approved with the following changes:

(1) Monitoring well MW-7 be considered the upgradient monitoring well instead of monitoring well MW-4.

(2) Monitoring well MW-8 be considered the downgradient monitoring well instead of monitoring well MW-2.

If you have any questions concerning this CAR Addendum please contact Mr. Greg Campbell at (904) 452-3180.

Sincerely,

K. R. GIES
LT, CEC, USN
By direction of the
Commanding Officer

Enclosure: (2 copies)
(1) Contamination Assessment Report (CAR)
Site 1162, U.S. Navy Outlying Field (OLF)
Bronson, Pensacola, Florida

Copy to:
SOUTHNAVFACENGCOM (Code 18410,
Byes Glover)
NAS Envir. Dept. (Dean Spencer,
Code 00500)

CONTAMINATION ASSESSMENT REPORT ADDENDUM

U.S. NAVY OUTLYING LANDING FIELD (OLF) BRONSON
SITE 1162
PENSACOLA, FLORIDA

PREPARED BY:

NAVY PUBLIC WORKS CENTER
BUILDING 3887
PENSACOLA, FLORIDA 32508-6500

AUTHOR: GREGORY ALLEN CAMPBELL, P.E.

APRIL 2, 1997

PREPARED FOR:

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND

2155 EAGLE DR., P.O. BOX 190010
NORTH CHARLESTON, SOUTH CAROLINA 29418

BYAS GLOVER, CODE 18410, ENGINEER-IN-CHARGE

PROFESSIONAL REVIEW CERTIFICATION

The Contamination Assessment Report Addendum contained in this report was prepared using sound, hydrogeologic principles and judgement. This assessment is based on the geologic investigation and associated information detailed in the text and appended to this report. If conditions are determined to exist that differ from those described, the undersigned engineer should be notified to evaluate the effects of any additional information on the assessment described in this report. This Contamination Assessment Report Addendum was developed for the gasoline fuel leak located at the former location of Building 1162, Bronson Field, Pensacola, Florida and should not be construed to apply to any other site.

Gregory Allen Campbell
Professional Engineer
P.E. No. 38572

4/2/97

Date

Mr. John Mitchell
Remedial Project Manager
Florida Department of Environmental Protection
Twin Towers Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

RE: CONTAMINATION ASSESSMENT ADDENDUM, SITE 1162, BRONSON FIELD, PENSACOLA, FLORIDA (FDEP FACILITY NO. 179300938)

Dear Mr. Mitchell:

This letter is in reference to your January 16, 1997 letter addressing comments to the Contamination Assessment Report (CAR) dated December 1996 for the subject site. Per your request, this CAR addendum is prepared in response to your comments as summarized below:

COMMENT 1: Excessively contaminated soil exists at the location of soil boring B3 which is also near the location of monitoring well MW-1. Monitoring well MW-1 had an increase in benzene and total BTEX between the two sampling events. Based upon apparent groundwater flow direction, an additional shallow monitoring well should be placed at the north central edge of the concrete pad, and another shallow monitoring well approximately 15 - 20 feet southwest of MW-1. I also suggest a soil boring with OVA analysis be performed beneath the center of the concrete pad.

RESPONSE 1: Monitoring wells MW-7 and MW-8 were installed northeast and southwest of monitoring well MW-1 on February 18, 1997 as shown in revised Figure 2-3 (see attachment A). Monitoring well construction detail diagrams for monitoring wells MW-7 and MW-8 are also provided in Attachment A. Soil samples were collected during the installation of monitoring wells MW-7 and MW-8 at 1, 4, 7, 10, 16, 19 and 20 feet below land surface (bls) and analyzed for volatile organic vapors using an OVA. The results of the OVA screening are shown in the lithological logs provided in Attachment A. Groundwater samples were collected from monitoring wells MW-7 and MW-8 on February 26, 1997 and analyzed for VOAs, PAHs, TPH and EDB using EPA methods 8260, 8270, FLPRO and 504, respectively. No contaminants were detected in the groundwater samples collected from monitoring well MW-7 and MW-8. A copy of the laboratory analysis is provided in Attachment B. A soil boring with OVA analysis was not performed beneath the center of the concrete pad due to lack of access in this area due to old abandoned engine equipment presently mounted on the pad. Since OVA screening was performed during the installation of monitoring well MW-7; no volatile organic vapors were detected in the soil samples collected at monitoring well MW-7; and the location of MW-7 is in the vicinity of the center of the pad; it is our opinion that the installation of a soil boring at the center of the pad is not needed.

Based upon the findings of this contamination assessment addendum, it is requested that the recommendations outlined in the CAR of December 1997 be approved with the following changes:

(1) Monitoring well MW-7 be considered the upgradient monitoring well instead of monitoring well MW-4.

(2) Monitoring well MW-8 be considered the downgradient monitoring well instead of monitoring well MW-2.

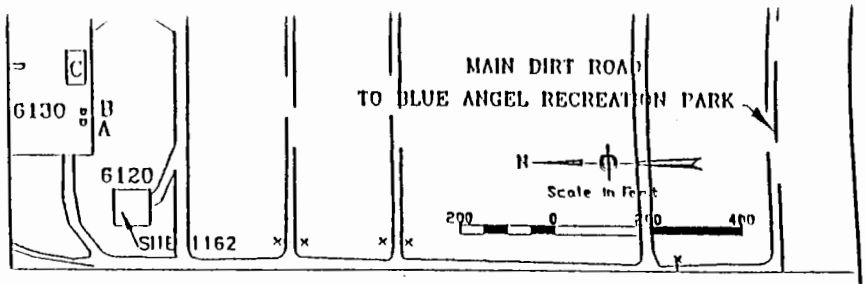
If you have any questions concerning this CAR Addendum please contact Mr. Greg Campbell at (904) 452-3180.

Sincerely,

Frank Stuart

ATTACHMENT A

(1) Revised Figure 2-3
(2) Monitor Well Construction Details (MW-7, MW-8)
(3) Lithological Logs (MW-7, MW-8)



MW-5

CHAIN LINK FENCE

MW-7

MW-2

DMW-6

MW-1

CONC. PAD
W/ MOUNTED
ENGINE

MW-4

LIMIT OF
EXCAVATION

MW-8

N

MW-3

0' 5' 10' 15'
SCALE FEET

LEGEND

— X — FENCE

MW-4 ● MONITORING WELL NUMBER
BORING HOLE NUMBER NUMBER

NAVY PUBLIC WORKS CENTER PENSACOLA, FLORIDA		
SCALE:	FIGURE 2-3	DRAWN BY: DWG. NO: REVISED BY:
MONITORING WELL LOCATION MAP SITE 1162, BRONSON FIELD		
CLIENT: NAS ENVIRONMENTAL DEPARTMENT,NAS PENSACOLA		

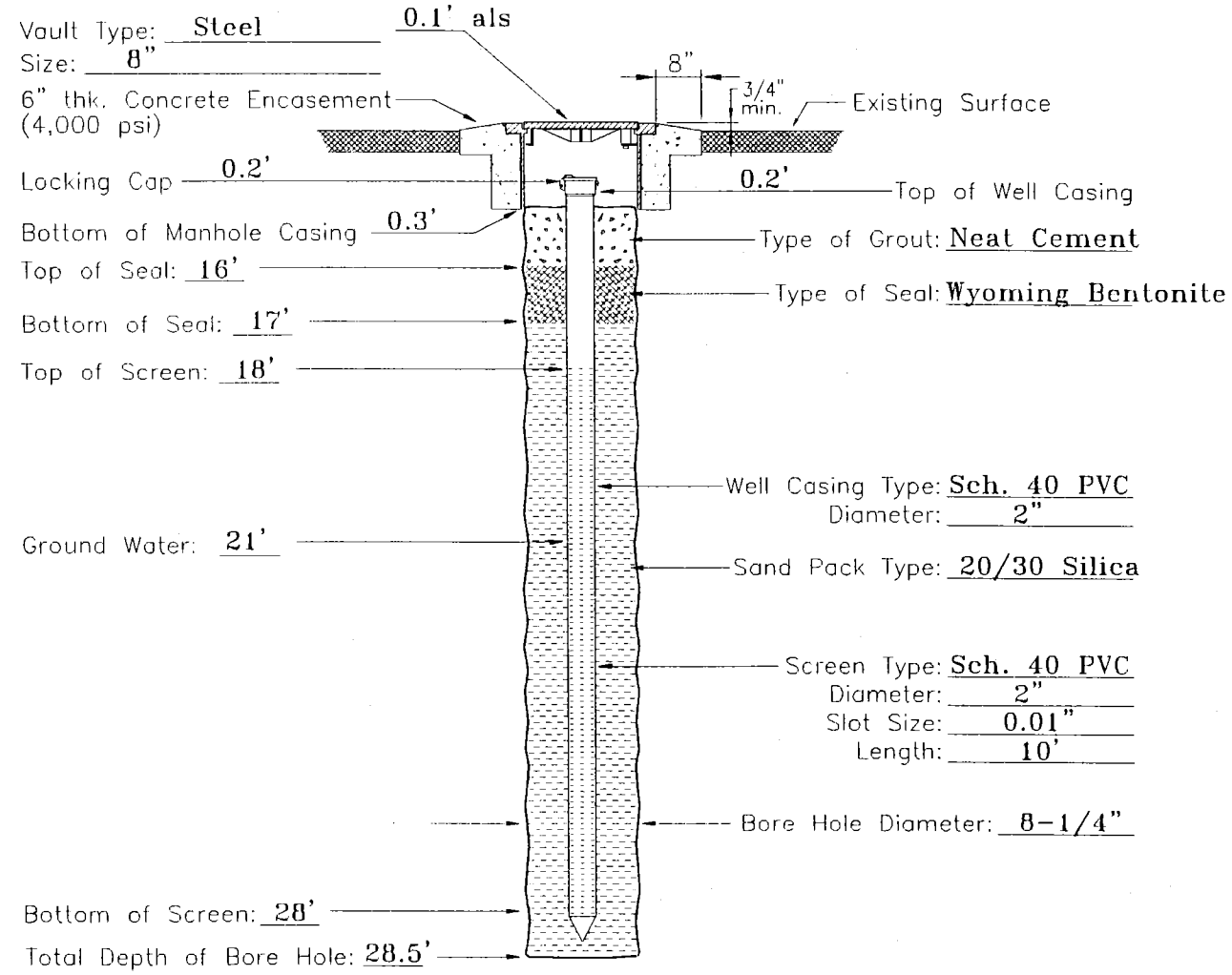
W.E.S., Inc.
Environmental Division
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-7

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1162, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/18/97 Finish: 02/18/97
TIME Start: 1300 Finish: 1400

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3-19951128.1143

W.E.S., Inc.
Environmental Division

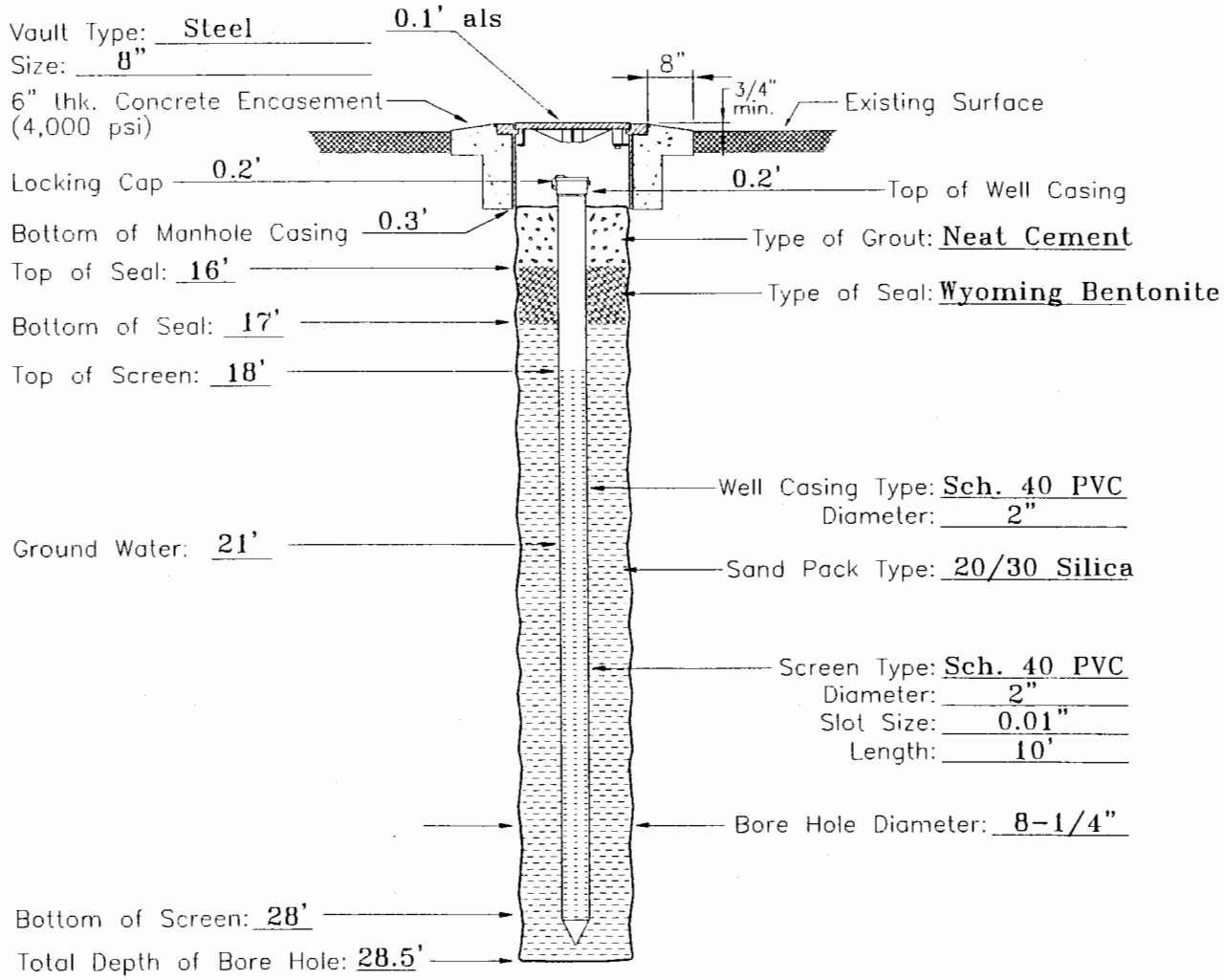
6389 Tower Lane
Sarasota, FL 34240-8810
(941) 371-7617
(941) 378-5218 Fax

MONITOR WELL CONSTRUCTION DETAIL

LOGGED BY: Patrick J. Brown
DRILLING CONTRACTOR: S. FL Test & Dr.
DRILLER'S NAME: Craig Griffey
WELL NUMBER: MW-8

CLIENT: NPWC, ROICC, NAS Pensacola, FL
LOCATION: Site 1162, Bronson Field
JOB NUMBER: N65114-95-D-2126
DATE Start: 02/18/97 Finish: 02/18/97
TIME Start: 1415 Finish: 1515

COMMENTS: (Lost circulation interval, Water level changes, Hole collapse interval, etc.):



NOTE: DEPTHS SHOWN ARE BELOW LAND SURFACE (B.L.S.)

DRAWING ABOVE IS NOT TO SCALE

CAD FILE @STA3> C:\ACADR13\MW-DETL1.DWG STA3--19951128.1143

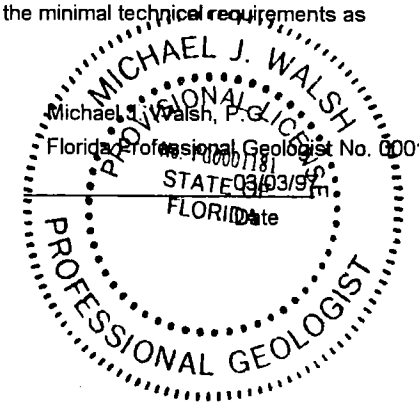
Site 1162					LOGGED BY: Patrick J. Brown			SHEET 1 OF 1		
Bronson Field					Contractor: W.E.S., Inc.			Dr. Method: HSA		
Pensacola, Florida					Driller: South Florida Testing & Drilling			Dr. Rig: Mobile B61HDX		
MONITORING WELL NO.: MW-7					Start Date: 02/18/97			Completed: 02/18/97		
					Start Time: 1300			Finish Time: 1400		
Delivery Order 0048					Contract No N65114-95-D-2126			CONTAMINATION DATA		
TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH		DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER		NOTES
								W/O	WITH	NET
POST HOLE HSA HA				100%	2		0' - 1'; Tan, Medium sand with humus/organics	0	NR	0
				100%	4		1' - 4'; Tan, Medium, Silty sand	0	NR	0
					6			0	NR	0
				100%	8		4' - 7';Tan , Medium, Silty sand			
				100%	10		7-10'; Beige, Medium, Silty sand	0	NR	0
					12					
				100%	14		10-13'; Light Beige, Silty, Medium to Fine Sand	0	NR	0
				100%	16		13-16'; Light Beige, Silty, Medium to fine sand	0	NR	0
					18					
				100%			16-19';Lt. Beige,Silty, Med. to Fine Sand	0	NR	0
				100%	20		19-20'; Clayey, Tan,Silty,Med., Fine Sand	0	NR	0
			Water Table @ 21' BLS							
					22		20-25'; White, Silty, Medium to Fine Sand			
					24					
							25-28'; White,Clayey Sand			
					26					
					28		End of Boring @ 28' BLS			
					30					

I certify that this lithologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statutes.

Prepared by:

Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

03/03/97
Date



Site 1162	LOGGED BY: Patrick J. Brown	SHEET 1 OF 1
Bronson Field	Contractor: W.E.S., Inc.	Dr. Method: HSA
Pensacola, Florida	Driller: South Florida Testing & Drilling	Dr. Rig: Mobile B61HDX
MONITORING WELL NO.: MW-8	Start Date: 02/18/97	Completed: 02/18/97
	Start Time: 1415	Finish Time: 1515
Delivery Order 0048	Contract No N65114-95-D-2126	CONTAMINATION DATA

TYPE	NUMB	BLOW	SAMP. INTV. (FT.)	SAMP. RECV. (IN)	DEPTH	DESCRIPTION OF MATERIALS AND CONDITIONS	OVA RESULTS (PPM) CARBON FILTER W/O	WITH	NET	NOTES
POST HOLE HSA HA						0' - 1'; Dark Brown, Medium Silty Sand	0	NR	0	
				100%	2					
				100%	4	1' - 4'; Brown, Medium, Silty Sand	0	NR	0	
					6		0	NR	0	
				100%	8	4' - 7';Tan /Brown, Medium, Silty Sand				
				100%	10	7-10'; Tan/Beige Medium, Silty Sand	0	NR	0	
					12					
				100%	14	10-13'; Beige, Medium, Silty Sand	0	NR	0	
				100%	16	13-16'; White/Beige, Medium, Silty Sand	0	NR	0	
					18					
				100%		16-19'; White, Medium to Fine,Silty Sand	0	NR	0	
				100%	20	19-20'; Clayey, Tan, Silty, Medium to Fine Sand	0	NR	0	
			Water Table @ 21' BLS							
					22					
					24	20-25'; White, Medium to Fine Sand				
					26	25-28'; White, Clayey Sand				
					28	End of Boring @ 28' BLS				
					30					

I certify that this lithologic log, including geologic and hydrogeologic interpretations, has been prepared under my direct supervision and meets the minimal technical requirements as set forth in Chapter 492 of the Florida Statutes.

Prepared by: Michael J. Walsh, P.G.
Florida Professional Geologist No. 0001181

MICHAEL J. WALSH
PROFESSIONAL LICENSE
No. PG0001181
STATE OF FLORIDA
PROFESSIONAL GEOLOGIST
Date 03/03/97

ATTACHMENT B

(1) Laboratory Analytical Results

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 70859
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70859
Sample Name / Location	BF-1162 Eq. Blank
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1500
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	02/27/97 JM
Date of Analysis	02/27/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70859	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	103
Toluene-d8	86-119	100
Bromofluorobenzene	85-116	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Does, Laboratory Director

Date: 3/12/97
Report Generated

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 70859
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70859
Sample Name / Location	BF-1162 Eq. Blank
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1500
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	02/20/97 JJ
Date of Analysis	03/01/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70859	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene-d5	35-114	78
2-Fluorobiphenyl	43-116	86
Terphenyl -d14	33-141	101

COMMENTS : _____

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : _____
Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 70859
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70859			
Sample Name / Location	BF-1162 Eq. Blank			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1500			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	03/04/97 MC			
Date of Analysis	03/04/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 70859	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	104

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70859
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70859			
Sample Name / Location	BF-1162 Eq. Blank			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1500			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	03/06/97 JJ			
Date of Analysis	03/08/97			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 70859	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	87
Nonatriacontane (C-39)	42-193 *	103

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 70860
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70860
Sample Name / Location	BF-1162 MW-7
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1530
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	02/27/97 JM
Date of Analysis	02/27/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70860	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	104
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	102

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 70860
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70860
Sample Name / Location	BF-1162 MW-7
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1530
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	02/28/97 JJ
Date of Analysis	03/01/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70860	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	75
2-Fluorobiphenyl	43-116	85
Terphenyl -d14	33-141	109

COMMENTS : _____

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : _____
Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 70860
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70860			
Sample Name / Location	BF-1162 MW-7			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1530			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	03/04/97 MC			
Date of Analysis	03/04/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 70860	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	96

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70860
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70860			
Sample Name / Location	BF-1162 MW-7			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1530			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	03/06/97 JJ			
Date of Analysis	03/08/97			
Sample Matrix	GW			
Dilution	x 1			
Parameter	1- 70860	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	91
Nonatriacontane (C-39)	42-193 *	140

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : _____ Date: 3/12/97
Jerry Dees, Laboratory Director

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 70861
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70861
Sample Name / Location	BF-1162 MW-8
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1550
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	02/27/97 JM
Date of Analysis	02/27/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70861	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	102
Toluene-d8	86-119	101
Bromofluorobenzene	85-116	101

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

610 PAH's by Method 8270

Lab Report Number: 70861
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70861
Sample Name / Location	BF-1162 MW-8
Collector's Name	PJB
Date & Time Collected	02/26/97 @ 1550
Sample Type (composite or grab)	Grab
Analyst	M. Chambers
Date of Extraction / Initials	02/28/97 JJ
Date of Analysis	03/01/97
Sample Matrix	GW
Dilution	X 1

Compound Name	1- 70861	units	Det. Limit	Flags
Acenaphthene	BDL	ug/L	2	
Acenaphthylene	BDL	ug/L	2	
Anthracene	BDL	ug/L	2	
Benzo(a)anthracene	BDL	ug/L	2	
Benzo(a)pyrene	BDL	ug/L	2	
Benzo(b)fluoranthene	BDL	ug/L	2	
Benzo(g,h,i)perylene	BDL	ug/L	2	
Benzo(k)fluoranthene	BDL	ug/L	3	
Chrysene	BDL	ug/L	2	
Dibenz(a,h)anthracene	BDL	ug/L	2	
Fluoranthene	BDL	ug/L	2	
Fluorene	BDL	ug/L	2	
Indeno(1,2,3-cd)pyrene	BDL	ug/L	2	
1-Methylnaphthalene *	BDL	ug/L	2	
2-Methylnaphthalene	BDL	ug/L	3	
Naphthalene	BDL	ug/L	2	
Phenanthrene	BDL	ug/L	2	
Pyrene	BDL	ug/L	2	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Nitrobenzene- d5	35-114	75
2-Fluorobiphenyl	43-116	90
Terphenyl -d14	33-141	107

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

Ethylene Dibromide by Method 504

Lab Report Number: 70861
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70861			
Sample Name / Location	BF-1162 MW-8			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1550			
Sample Type (composite or grab)	Grab			
Analyst	M. Chambers			
Date of Extraction / Initials	03/04/97 MC			
Date of Analysis	03/04/97			
Sample Matrix	GW			
Dilution	X 1			
Compound Name	1- 70861	units	Det. Limit	Flags
Ethylene Dibromide	BDL	ug/L	0.02	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
Tetra-Chloro-m-Xylene	54-140	96

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter. ug/Kg = microgram per Kilogram.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
Report Generated

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Analytical Report
Petroleum Range Organics by FLPRO

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Lab Report Number: 70861
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70861			
Sample Name / Location	BF-1162 MW-8			
Collector's Name	PJB			
Date & Time Collected	02/26/97 @ 1550			
Sample Type (composite or grab)	Grab			
Analyst	J. Moore			
Date of extraction / Initials	03/06/97 JJ			
Date of Analysis	03/08/97			
Sample Matrix	GW			
Dilution		x 1		
Parameter	1- 70861	units	Det. Limit	Flags
Petroleum Range Organics by FLPRO	BDL	mg/L	0.25	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
ortho-Terphenyl	82-142 *	93
Nonatriacontane (C-39)	42-193 *	139

COMMENTS : * = Suggested surrogate recovery limits listed in the method. In-house laboratory limits are in the process of being determined.

BDL = Below Detection Limit. mg/L = milligram per Liter. mg/Kg = milligram per Kilogram.

Approved by : _____ Date: 3/13/97
Jerry Dees, Labbratory Director

End of Report

Navy Public Works Center
Environmental Laboratory

Bldg. 3887, Code 920
NAS Pensacola, FL 32508 - 6500
Phone (904) 452-4728/3642
DSN 922-4728/3642

Client: NPWC Environmental
Address: Bldg. 3887, Code 910
NAS Pensacola,FL 32508
Phone #: 452-3180
Contact: Greg Campbell

Analytical Report

601/602 Volatiles by Method 8260

Lab Report Number: 70862
Sample Date: 02/26/97
Received Date: 02/27/97
Sample Site: NAS Pensacola, FL
Job Order No.: 130 5002

LAB Sample ID#	1- 70862
Sample Name / Location	BF-1162 Trip Blank
Collector's Name	PJB
Date & Time Collected	02/26/97 @ AM
Sample Type (composite or grab)	Grab
Analyst	J. Moore
Date of Extraction / Initials	02/27/97 JM
Date of Analysis	02/27/97
Sample Matrix	DI
Dilution	X 1

Compound Name	1- 70862	units	Det. Limit	Flags
Benzene	BDL	ug/L	1	
Bromodichloromethane	BDL	ug/L	1	
Bromoform	BDL	ug/L	2	
Bromomethane	BDL	ug/L	3	
Carbon Tetrachloride	BDL	ug/L	1	
Chlorobenzene	BDL	ug/L	1	
Chloroethane	BDL	ug/L	1	
2-Chloroethylvinyl ether	BDL	ug/L	1	
Chloroform	BDL	ug/L	1	
Chloromethane	BDL	ug/L	1	
Dibromochloromethane	BDL	ug/L	1	
1,2-Dichlorobenzene	BDL	ug/L	1	
1,3-Dichlorobenzene	BDL	ug/L	1	
1,4-Dichlorobenzene	BDL	ug/L	1	
Dichlorodifluoromethane	BDL	ug/L	1	
1,1-Dichloroethane	BDL	ug/L	1	
1,2-Dichloroethane	BDL	ug/L	1	
1,1-Dichloroethene	BDL	ug/L	1	
trans-1,2-Dichloroethene	BDL	ug/L	1	
1,2-Dichloropropane	BDL	ug/L	1	
cis-1,3-Dichloropropene	BDL	ug/L	1	
trans-1,3-Dichloropropene	BDL	ug/L	1	
Ethylbenzene	BDL	ug/L	1	
Methylene Chloride	BDL	ug/L	1	
Methyl-tert-butyl ether (MTBE) *	BDL	ug/l	1	
1,1,2,2-Tetrachloroethane	BDL	ug/L	1	
Tetrachloroethene	BDL	ug/L	1	
Toluene	BDL	ug/L	1	
1,1,1-Trichloroethane	BDL	ug/L	1	
1,1,2-Trichloroethane	BDL	ug/L	1	
Trichloroethene	BDL	ug/L	1	
Trichlorofluoromethane	BDL	ug/L	1	
Vinyl Chloride	BDL	ug/L	1	
Xylenes (Total)	BDL	ug/L	1	

SURROGATE SPIKE RECOVERIES

	Acceptance Limits	Percent Recovery
1,2-Dichloroethane-d4	75-133	102
Toluene-d8	86-119	100
Bromofluorobenzene	85-116	100

COMMENTS :

BDL = Below Detection Limit. ug/L = microgram per Liter, ug/Kg = microgram per Kilogram. * = FL HRS certification pending.

Approved by : Jerry Dees, Laboratory Director

Date: 3/12/97
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End of Report